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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,467	05/31/2001	Liang Chen	25094A	1738
22889	7590	01/07/2004	EXAMINER	
OWENS CORNING			WYROZEBSKI LEE, KATARZYNA I	
2790 COLUMBUS ROAD			ART UNIT	PAPER NUMBER
GRANVILLE, OH 43023			1714	

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/871,467

### Applicant(s)

CHEN ET AL.

### Examiner

Katarzyna Wyrozebski Lee

### Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-10, 12-14, 16, 17 and 19 is/are rejected.
- 7) ☐ Claim(s) 3, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 1203.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1003. 6) ☐ Other: \_\_\_\_\_

In view of applicant's amendment and updates search following second non-final office action has been necessitated. During updated search the examiner found prior art disclosing addition of mineral oil to fiber compositions, which prior art would reject claims 11 and 12 previously indicated as allowable. Pending claims are 1-10, 12-14, 16-20

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, 4, 8 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Dockrill (US 5,035,936).

The prior art of Reck discloses composition for a binder system utilized with fibers, which comprises polymer, crosslinking agent and surfactant.

According to the examples the polymer utilized in the prior art of Reck (col. 10) includes polyacrylic acid, as well as its copolymer with maleic acid. The crosslinking according to the same examples is triethanol amine. Crosslinking agents are utilized in an amount of 10 ppm to 5% by weight (col. 6, line 7).

According to the specification of the prior art of Reck, one of ordinary skill in the art is also enabled to utilize emulsifiers such as ethylene oxide/propylene oxide copolymers (col. 6,

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line 20), which is also well known surfactant. Other emulsifiers, which can also be utilized are surfactants include alkyl phenol ethoxylates, fatty acids ethoxylates, sulfur containing alkyl phenols. Such compounds can be utilized in an amount of 0.05-20 wt %.

The prior art of Reck forms aqueous composition, having solids content of 44.5 and 50 % (see examples, col. 10).

The process involves steps of applying binder composition to fibers by spraying and curing it (col. 9, lines 30-55). Sprayed fibers are then pressed at a temperature of 100-250°C for 15 sec-30 min. to give stable product.

The difference between the present invention and the disclosure of RECK is limitation of the addition of the mineral oil to the mineral fiber composition.

With respect to the above difference, the prior art of DOCKRILL discloses addition of mineral oil as a retention additive. Although the amount of the oil is not disclosed, DOCKRILL indicated that it is an additive, and use of additives in rather small amounts is rather expected (col. 3, lines 35-36).

Mineral oil acts as a suppressing or retention agent when incorporated into composition comprising mineral fibers such as glass fibers.

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize mineral oil in the composition of RECK and thereby obtain the claimed invention. Mineral oil would act as suppressing agent or retention agent in the composition of RECK.

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3. Claims 16, 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) and Dockrill (US 5,035,936) in view of Arkens (US 5,763,524)

The discussion of the disclosure of the prior art of Reck and Dockrill from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is showing that polycarboxy/polyhydroxy binder system can also be utilized with glass fiber to produce insulation and also utilizing the same process steps.

With respect to the above differences, the prior art of Arkens discloses binder composition, which is applied to the glass fibers.

The composition comprises polyacid and polyol curing agent with phosphorus accelerator. Polyacid utilized in the examples is also polyacrylic acid and polyhydroxy compound utilized in the examples include glycerol, bis-hydroxyadipamide (col. 9 ex. 1 and col. 11, ex. 5). The specification of the prior art of Arkens also enables one of ordinary skill in the art to utilize curing agents such as triethanol amine (col. 7, line 1).

The additives in the prior art of Arkens include emulsifiers and organosilanes (col. 6, lines 52-57).

According to example 4, the binder composition is applied glass fiber substrate and tested (col. 10). The specification (col. 8, lines 37-50) teaches further steps. After the binder composition has been applied to the glass fiber, the entire article is heated and cured at a temperature of 120-400°C. The method of application of the binder to the fiber glass includes spraying, padding, saturating, roll coating, curtain coating, beater deposition and coagulation.

The heat resistant non-wovens formed in the prior art of Arkens can be utilized in insulation bats of rolls (col. 8, lines 61-64).

In order for the composition to be useful as heat insulation, the fiber utilized have to withstand high temperatures. The prior art of Arkens discloses that such temperature has to be above 125°C.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize binder of Reck in the disclosure of Arkens and thereby obtain claimed invention. Both prior art disclosures teach binder system containing polyacid and poly-hydroxyl compound that is capable of binding various types of fibers. Utilizing such binder with glass fibers would result in article, capable of withstanding much higher temperatures.

4. Claims 15, 16, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) and Dockrill (US 5,035,936) in view of Reck (US 6,348,530).

The discussion of the disclosure of the prior art of Reck and Dockrill from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck'773 is limitation of glass fiber, and wherein the process of applying the binder to glass fibers can be the same as in Reck'773.

With respect to the above differences the prior art of Reck'530 discloses binder composition comprising polyacid and polyhydroxylated amine, which is applied to the fibers.

Example 9 of Reck'530 discloses composition comprising polyacrylic acid, ethoxylated oleylmonoamide in water (col. 8).

Fibers that can be utilized in the prior art of Reck'530 include glass fibers (col. 24, lines 49-60) as well as hemp, animal fibers, cotton or polymer fibers.

According to claim 22 of Reck'530, resulting composition can be utilized as insulating material with an additive such as dust suppressant, coupling agents such as alkoxysilanes, lubricants, emulsifiers and wetting agents (col. 21, lines 31-49).

Fibers such as glass fibers, when utilized with the binders of Reck, would form an article having high strength in the dry and wet states and can be utilized in areas such as roofing, insulation, for which other natural fibers would not be utilized.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize glass fibers of Reck'530 with the binder of Reck'773 and thereby obtain the claimed invention. The above combination would form article having high strength in the dry and wet states and can be utilized in areas such as roofing, insulation.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) and Dockrill (US 5,035,936) in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck and Dockrill from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree, which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

6. Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) and Dockrill (US 5,035,936) in view of Arkens (US 5,763,524) as applied to claims 1, 2, 4-8, 13, 14, 16, 17, 19 above, and further in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck, Dockrill and Arkens from paragraphs 2 and 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree,



which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck and Arkens and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

7. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Reck (US 6,348,530) as applied to claims 1, 2, 4-8, 13, 14, 16, 17, 19 above, and further in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree, which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck'773 and Reck'530 and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

#### *Allowable Subject Matter*

8. Claims 3 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record found during the search did not contain recitation of a particular ethoxylated 2,4,7,9-tetramethyl-5-decyn-4,7-diol.

The prior art of record or the prior art found during updated search does not disclose the process of the present invention.

#### *Claim Objections*

9. Claim 20 is objected to because of the following informalities: Claim 20 is a product claim that depends on the process of claim 17. At the same time claim 17 is also a product

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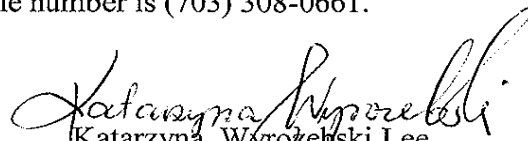
claim. For more prompt prosecution of the application claim 20 was treated as if dependent of claim 18, which is process claim. Appropriate correction is required.

10. The applicants in amendment filed on 10/16/2003 argued the rejections, which are no longer applicable against present claims therefore the arguments are considered mute. The non-finality of this office action will therefore give applicant an opportunity to argue new rejections against present claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Katarzyna Wyrozebski Lee  
Primary Examiner  
Art Unit 1714

December 19, 2003